

Correct Identification of the *Platycerus* Species (Coleoptera, Lucanidae) Occurring on the Yunling Mountains in Northwestern Yunnan, Southwest China

Yûki IMURA

Shinohara-chô 1249–8, Kôhoku-ku, Yokohama, 222–0026 Japan

Abstract A new species of the lucanid genus *Platycerus* is described from the Yunling Mountains in northwestern Yunnan under the name *P. cupreimicans*.

In the first volume of “Insects of the Hengduan Mountains Region” published in 1992 at Beijing, China, totally twelve species of the family Lucanidae were recorded by MA Wen-Zhen from northwestern Yunnan and Sichuan based upon the materials collected by “the comprehensive scientific expedition to the Hengduan Mountains Region, Academia Sinica”. Of these, the most noticeable was “*Platycerus delicatulus*” which was said to have been collected from “Weixi, Pantiange, 2,920 m” of northwestern Yunnan. This record was very important, since nothing had been known on the same genus from Yunnan Province until that time. However, I cannot but strongly doubt the accuracy of this identification, or even of the record itself, because of several reasons as mentioned below.

In the first place, *P. delicatulus* is known to be endemic to Honshu, Shikoku and Kyushu of the Japanese Archipelago and its occurrence in northwestern Yunnan might be impossible unless artificially transplanted. Besides, its description made by the Chinese author contains several problems which cannot be overlooked. To make sure, I at first reproduce her description followed by its English translation below.

(p. 537)

(3) 绿宽喙甲 *Platycerus delicatulus* Lewis, 1883. 新记录

体型小, 较狭长, 背面蓝黑色, 雌虫的颜色变化较大, 通常为蓝绿或铜绿色, 体表甚光亮; 体下黑色, 腹部大多褐色或褐红色; 足呈褐色或褐红色。触角浅褐色, 棒部端节呈叉状。

头部稍微短宽, 且厚, 前角近三角形, 复眼之前微呈纵向隆脊形, 上面有粗大刻点; 复眼很突出。上颚通常呈黑色、深褐色或褐红色, 雄性上颚较长, 前端尖, 外缘微呈弧形, 上缘近端部有 1 齿, 内缘有 3 齿; 雌性上颚较短。前胸背板短宽, 宽于鞘翅, 前角稍微尖, 侧角很大, 后角近直角形, 侧缘和后缘具有较窄边框; 上面散布细小刻点。小盾片半圆形, 散

布小刻点。鞘翅狭长,两侧平行,后外端角圆弧形;上面平,两侧向下外侧倾斜,肩凸明显,匀布粗大刻点,每翅具有 5—7 行明显刻点行。臀板不外露。后胸腹板中间光滑,两侧密布刻点和黄色短绒毛。腹部光亮,密布粗大刻点和黄色绒毛。足较细长,中、后足的胫节尤其细长,后足胫节微弧弯,前足胫节外缘有 5 个小齿;跗节细长而厚,爪大微弯曲。

(p. 538)

体长: 14.9—18.5 mm (带上颚), 15.3—16.1 mm (不带上颚); 体宽: 6.1—7.5 mm。

采集记录: 云南(维西攀天阁, 2920 m, 1981. VII. 20—21, 5♂♂)。

分布: 云南; 日本。

(3) Lükuanqiaojia *Platycerus delicatulus* LEWIS, 1883, new record

Body small, relatively narrow and elongated, with the dorsal surface bluish black, coloration of female rather variable, usually bearing bluish green or coppery green, body surface strongly polished; venter black, most part of abdomen brown or reddish brown; legs brown or reddish brown. Antennae pale brown, and fissate.

Head rather short, wide and thick, with the front angles nearly triangular in shape, a little convex above in front of eyes, upper surface scattered with large punctures; eyes strongly protruded [laterad]. Mandibles usually black, deep brown or reddish brown, those in male longer, pointed at apices, outer margins gently arcuate, bearing a single tooth on upper margin near the base, and three teeth in inner margin; female mandibles shorter. Pronotum short and wide, wider than elytra, with the front angles slightly pointed, lateral angles very large, hind angles nearly rectangular, lateral and basal margins narrowly bordered; upper surface scattered with minute punctures. Scutellum semicircular, scattered with small punctures. Elytra narrow and elongated, parallel-sided, postero-outer angles rounded; dorsal surface flat, with the lateral portions inclined outwards, shoulders distinct, homogeneously scattered with large punctures, each elytron with 5—7 rows of clearly set punctures. Pygidium not exposed. Central part of metasternum smooth and glossy, coarsely scattered with punctures and short yellow hairs bilaterally. Abdomen shiny, coarsely scattered with large punctures and yellow hairs. Legs rather narrow and long, above all in meso- and metatibiae, metatibia gently arcuate, protibia with five teeth on outer margin; tarsi narrow, long and thick, claws large and gently arcuate.

Length: 14.9—18.5 mm (including mandibles), 15.3—16.1 mm (excluding mandibles); width: 6.1—7.5 mm.

Collecting data: Yunnan (Weixi Pantiang, 2920 m, 1981. VII. 20—21, 5♂♂).

Distribution: Yunnan; Japan.

The most incomprehensible point is that the description contains the findings on the female at least in coloration and length of the mandibles, in spite of showing no record of the female in the collecting data. Besides, it is not acceptable that the length

of the specimens measured 14.9–18.5 mm. It is true that *P. delicatulus* is one of the largest species of the genus *Platycerus* distributed in East Asia, and yet its length including the mandibles reaches a little over 15 mm even in the largest individual. It is absolutely impossible to reach 18.5 mm, however large it may be. Moreover, this description informs us of almost nothing of taxonomic importance. It does not mention anything about detailed structure of the male mandibles and genital organ, both of which are indispensable in the classification of *Platycerus*. In my view, the author may have identified the species only because of similarity in body form and coloration, which she may have judged from the illustration shown in certain picture books of the Japanese Coleoptera. Impossibly large size of the specimens may have been caused simply by a mistake for some reason.

Thus, the truth about the *Platycerus* species recorded from Yunnan is still wrapped in mystery. If its description were accompanied with illustrations, we could know something more about the beetle. From the poor and partly incorrect description alone, however, it is impossible even to assume its identity. It may belong to the genus *Platycerus*, but its true systematic position remains unknown until the specimens in question are re-examined by an experienced specialists.

In order to dispel my doubt, I tried to re-examine the specimens in question which might be preserved in the collection of the Academia Sinica, Beijing. At my request, Dr. YU Peiyu, the former professor of the same institute, kindly took trouble to find the lucanid specimens, but the result was quite pessimistic. All the specimens once examined by MA seem to be missing now, and nobody can re-examine them.

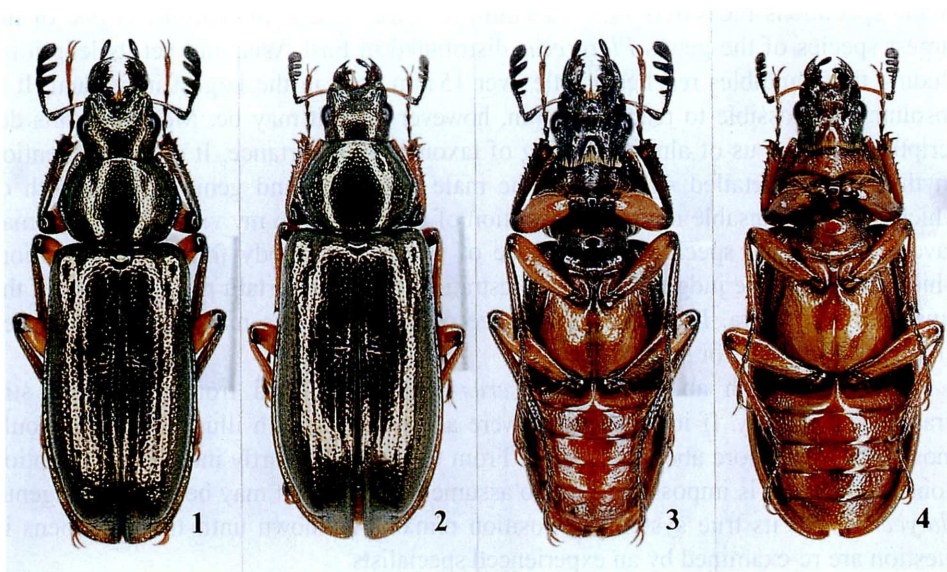
To solve the problem, I visited northwestern Yunnan at the beginning of October 2005. I made a survey in the high altitudinal area of the Yunling Mountains on which both Weixi and Pantiange are located, and succeeded in collecting a long series of *Platycerus* specimens at three different stations. The series was composed of a single species completely different from *P. delicatulus* in both external appearance and male genitalic structure, as was expected. The Yunnan race is considered to be most closely allied to *P. dundai* known from west-central and southern Sichuan, but apparently distinguishable from that species. In the following lines, I am going to introduce it into science under the name of *P. cupreimicans* nov.

Before going into description, I wish to express my sincere gratitude to Mr. Yoshiyuki NAGAHATA (Yonezawa) and Mr. FAN Ting (International Academic Exchange Center of the Academia Sinica, Chengdu) for their kind aid through my field work. Heartly thanks are also due to Dr. Shun-Ichi UÉNO (National Science Museum, Tokyo) for revising the manuscript of this paper.

***Platycerus cupreimicans* IMURA, sp. nov.**

(Figs. 1–6)

Length (including mandibles): ♂, 9.6–12.7 (arithmetic mean 11.23) mm; ♀, 9.7–12.2 (arithmetic mean 11.05) mm. Dorsal surface strongly polished, with the col-



Figs. 1–4. *Platycerus cupreimicans* from a pass ca. 5 km east of Pantiang of northwestern Yunnan. — 1, 3, Holotype (♂); 2, 4, paratype (♀) (1 & 2, dorsal view; 3 & 4, ventral view).

oration coppery or brassy with a faint greenish tinge in both sexes; venter reddish brown with the exception of head and pronotum which are much darker, above all in male; mandibles and palpi dark brown though partly reddish brown; antennae dark brown, though basal and median portions of scapes reddish brown; femora yellowish brown except for darker apical tips, tibiae also yellowish brown though usually a little darker than in femora, tarsi and claws brown though usually a little darker in basal parts.

Most closely allied to *P. dundai* IMURA et BARTOLOZZI (sensu IMURA, 2005) known from west-central and southern Sichuan, but distinguished from that species as follows: 1) size much smaller; 2) coloration very different; 3) male mandibles a little shorter on an average, with the outer margins a little more roundly arcuate, dorsal surface more narrowly concave in basal portions, inner margins of retinacula quadri- to hexadentate on each side; 4) lateral sides of pronotum more remarkably angulate at basal third and more strongly convergent therefrom towards front angles.

Male genital organ as shown in Fig. 6 a–h; paramere almost as in *P. dundai*, though obviously narrower and less acutely narrowed towards dorso-posterior angle in lateral view; aedeagus a little shorter and a little different in shape in lateral view; a pair of visor-like protuberances larger, wider and more obtusely rounded at tips.

Female genital organ as shown in Fig. 6 i, with the inner apical angle of gonocoxite nearly rectangular and hardly projected postero-internally, stylus robust.

Type series. Holotype: ♂, pass ca. 5 km east of Pantiang [攀天阁], 2,850–

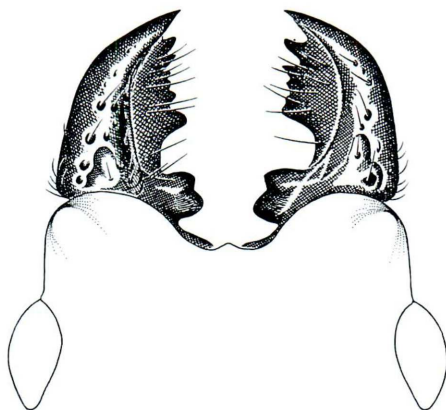


Fig. 5. Male mandibles of *Platycerus cupreimicans* from a pass ca. 5 km east of Pantiang of northwestern Yunnan.

2,950 m in altitude, in Weixi-lisuzu-zizhuxian [维西傈僳族自治县], of northwestern Yunnan, Southwest China, 3-X-2005, Y. IMURA & Y. NAGAHATA leg., to be deposited in the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Paratypes [totally 34♂♂, 41♀♀+7 exs.]: 1♂♂, 3♀♀(+1 broken specimen), same data as for the holotype; 10♂♂, 5♀♀(+3 broken specimens), same locality, 4-X-2005; 1♂, 3♀♀, same locality, larvae collected in the field and emerged in the laboratory in the winter of 2005–2006; 8♂♂, 9♀♀(+3 broken specimens), pass ca. 14 km east-southeast of Weixi, 3,200–3,400 m in altitude, on the borders of Weixi-lisuzu-zizhuxian and Lijiang-naxizu-zizhuxian [丽江纳西族自治县], of northwestern Yunnan, Southwest China, 5-X-2005; 5♂♂, 5♀♀, same locality, 6-X-2005; 3♂♂, 4♀♀, same locality, larvae collected in the field and emerged in the laboratory in the winter of 2005–2006; 6♂♂, 8♀♀, eastern slope of Mt. Laojun Shan [老君山], 3,000–3,400 m in altitude, near the borders between Lijiang-naxizu-zizhuxian and Jianchuan Xian [剑川县], of northwestern Yunnan, Southwest China, 7~8-X-2005; 4♀♀, same locality, larvae collected in the field and emerged in the laboratory in the winter of 2005–2006; all collected by Y. IMURA & Y. NAGAHATA and preserved in coll. Y. IMURA.

Notes. Hind angles of the pronotum of the new species are rounded, so that it belongs to the group of *P. delicatulus*. It is discriminated at a glance from all the hitherto known members of the genus in having uniquely colored dorsal surface. Its male mandibles and genital organ are also unique in the shape and useful for differential diagnosis. Judging from the basic structure of the male genital organ, the new species doubtless belongs to the same group as *P. dundai* (IMURA & BARTOLOZZI, 1994; see also IMURA, 2005) distributed in the west-central and southern part of Sichuan Province.

The new species was found from three different sites on the Yunling Mountains. Though geographical variation is hardly recognizable, the Laojun Shan specimens are

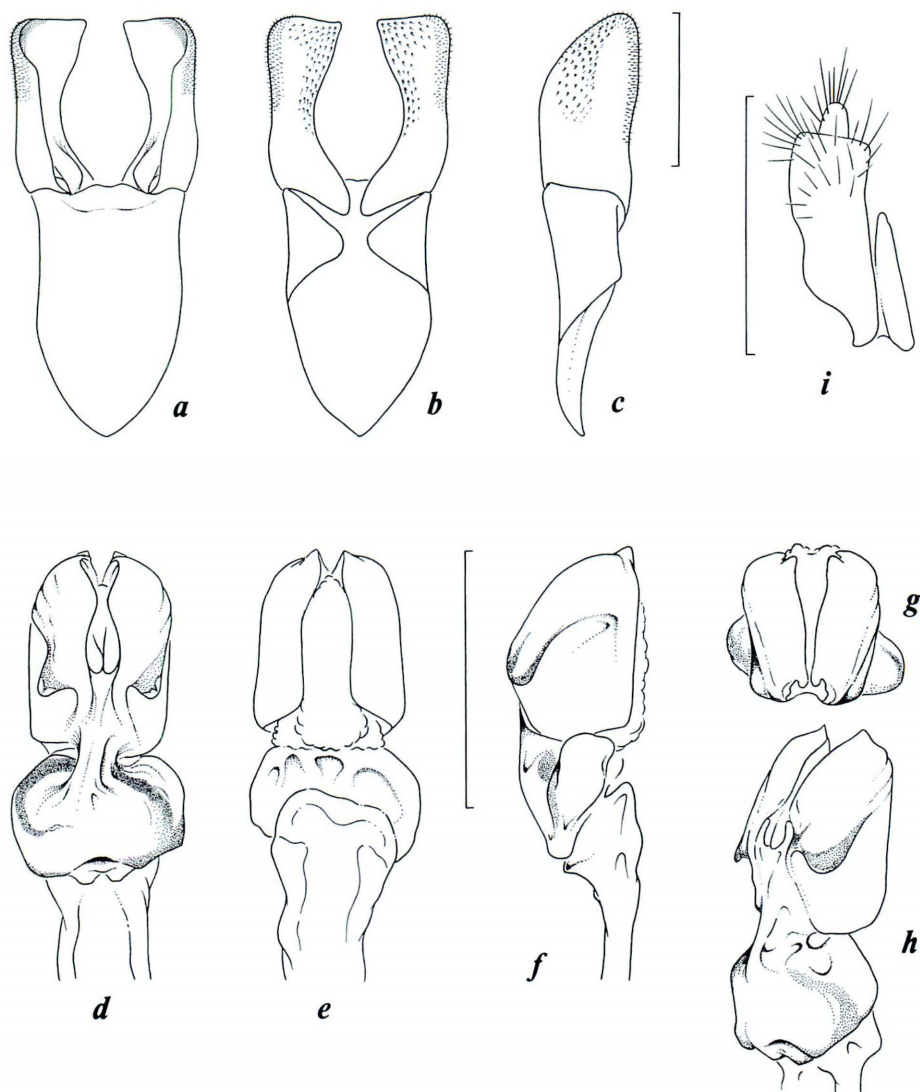


Fig. 6. Genital organ of *Platycerus cupreimicans* from a pass ca. 5 km east of Pantiang of northwestern Yunnan. — a–c, Paramere (=lateral lobe) and basal piece; d–h, aedeagus (=median lobe), i, left gonocoxite of the female genitalia. — a & d, Ventral view; b, e & i, dorsal view; c & f, right lateral view; g, view from aedeagal apex; h, right subventral view. Scale: 1 mm.

obviously larger than those from two other localities. The range of body length and the arithmetic mean (abbreviated to M) of the specimens from each locality are as follows:

- 1) Pass E of Pantiang: ♂, 10.2–12.0 (M 11.23) mm; ♀, 10.9–11.7 (M 10.87) mm.

2) Pass ESE of Weixi: ♂, 9.6–11.8 (M 10.87) mm; ♀, 9.7–12.0 (M 10.87) mm.

3) Laojun Shan: ♂, 11.7–12.7 (M 12.14) mm; ♀, 11.1–12.2 (M 11.72) mm.

The main habitat of the new species is deciduous broadleaved forest partly mixed with coniferous trees (*Pinus*, *Tsuga*, *Abies*, etc.) now rather sporadically remained in the high altitudinal area of the Yunling Mountains within the range between 2,800 m (above the pine tree and evergreen oak tree zone) and 3,400 m (below *Abies* and *Rhododendron* zone) in the altitude.

All the imagines collected were hibernating mainly in white-rotten part of old branch or trunk. The food plants often preferred by the new species are *Acer*, *Prunus*, *Betula*, *Tilia*, *Rhododendron* and certain kind of camphor tree. From the same environmental condition, were discovered many larvae of *Platycerus* most probably referable to the same species. The present new species also leaves a peculiar oviposition mark on the surface of its food plant.

要 約

井村有希：中国云南省北西部云岭山脈に産するルリクワガタの正体。——中国科学院青藏高原综合科学考察队による「横断山区昆虫」第一冊（1992年5月出版）のなかで、同院動物研究所の馬文珍により、「云南，维西攀天阁，2,920 m」からルリクワガタ属の1種が *Platycerus delicatulus* という同定名のもとに記録された。云南省からはそれまで、ルリクワガタ属は知られていなかったため、これはたいへん貴重な記録として注目すべきものであった。しかしながら、わが国の特産種とみなされてきた *P. delicatulus* が云南省北西部に自然分布しているとは考えにくい。記載文にも不可解な点が含まれており、同定あるいは記録そのものの信憑性について疑問がもたれたため、筆者は問題の標本について中国科学院に問い合わせたが、使用された標本は現在、行方がわからなくなっており、再鑑定をすることはできなかった。そこで、問題を解決すべく2005年10月上旬、筆者自ら「维西攀天阁」のある云南省北西部の云岭山脈高所を調査したところ、同所にはたしかにルリクワガタ属の1種が生息していたが、案の定、*P. delicatulus* とは似ても似つかぬまったくの別種であることが判明した。云岭山脈の種は、四川省中西部と南部から記録されているデングルルリクワガタにきわめて類縁に近いものと考えられたが、比較検討の結果、未記載種と判断されたので、その特徴的な体色と強い光沢にちなみ、アカガネルリクワガタ *P. cupreimicans* という名を与え、新種として記載した。

References

- IMURA, Y., 2005. On the genus *Platycerus* (Coleoptera, Lucanidae) of Mt. Gongga Shan and Mt. Erlang Shan in west-central Sichuan, Southwest China. *Elytra, Tokyo*, **33**: 501–512.
- & L. BARTOLOZZI, 1994. Descriptions of two new species of *Platycerus* (Coleoptera, Lucanidae) from central Sichuan, Central China. *Ibid.*, **22**: 139–143.
- MA, W.-Z., 1992. Coleoptera: Passalidae and Lucanidae. In: *Insects of the Hengduan Mountains Region*, **1**: 537–540. Kexuechubanshe [科学出版社], Beijing. (In Chinese, with English title and summary.)